AP ENVIRONMENTAL SCIENCE • EXERCISE SHEET

5.8 Impacts of Overfishing

Name: _____ Class: _____ Date: _____ **Total: 9 marks**

Objective

Build the skills to answer exam questions on **overfishing**.

You must be able to:

- explain how **overfishing** 过度捕捞 collapses fish stocks
- describe **bycatch** 兼捕 and destructive methods
- suggest management (quotas, protected areas)

1 Worked examples

Study these first. Each one shows the method for a question type used later —follow the steps and you can do the Practice and Exam-style questions yourself.

How overfishing works

Fish are a **common resource**; catching them faster than they **reproduce** collapses the stock. Once a population falls too low, it may not recover.

Destructive methods

- **Bycatch** —non-target species (dolphins, turtles) caught and killed in nets.
- **Bottom trawling** —dragging nets over the seafloor destroys habitat.

Consequences

Collapsed fisheries harm the marine food web and the people who depend on fishing for food and income.

Management solutions

- **Catch quotas/limits** on how much can be taken.
- **Marine protected areas** where fishing is banned so stocks recover.
- **Selective gear** to reduce bycatch, and seasonal closures.

2 Practice

Now apply the methods above.

2.1 Why does overfishing collapse a fish stock? [1]

2.2 What is bycatch? [1]

2.3 State one method to manage a fishery sustainably. [1]

3 Exam-style questions

3.1 A marine protected area helps fish stocks by [1]

- **A** allowing unlimited fishing
- **B** banning fishing so populations recover
- **C** removing all fish
- **D** adding pollutants

3.2 A commercial fishery catches fish faster than they reproduce.

(a) Predict what happens to the fish population. [1]

(b) Explain two ways this could be prevented. [2]

3.3 Explain why bottom trawling is especially damaging to marine ecosystems. [2]

4 Go further

You are now ready for the real exam questions on this subtopic:

- work through the **5.8 Impacts of Overfishing** lesson on the **Learn** page;
- read the **Impacts of Overfishing** section of the AP Environmental Science handout on the **Know** page.

Solutions

2.1 Fish are caught faster than they can reproduce, so the population shrinks and may not recover.

2.2 Non-target species caught (and often killed) while fishing.

2.3 Any one: catch quotas, marine protected areas, selective gear, seasonal closures.

3.1 B —banning fishing so populations recover.

3.2 (a) It declines and may collapse. (b) Any two: catch quotas, marine protected areas, selective gear, seasonal closures.

3.3 Dragging nets over the seafloor destroys the habitat and organisms living there, not just the target fish, damaging the whole ecosystem.